

## WORLD INTELLECTUAL PROPERTY ORGANIZATION International Bureau



# 15PH-0422

## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 7:

C07H 21/04, 21/02, C12Q 1/68, 15/63,
A61K 48/00

(11) International Patent Classification 7:

(43) International Patent Classification 7:

(43) International Patent Classification 7:

(11) International Publication Number:

WO 00/40595

(43) International Publication Date:

13 July 2000 (13.07.00)

(21) International Application Number:

PCT/US99/29593

(22) International Filing Date:

14 December 1999 (14.12.99)

(30) Priority Data:

09/226,568

7 January 1999 (07.01.99)

US

(63) Related by Continuation (CON) or Continuation-in-Part (CIP) to Earlier Application

US Filed on 09/226,568 (CIP) 7 January 1999 (07.01.99)

(71) Applicant (for all designated States except US): ISIS PHAR-MACEUTICALS, INC. [US/US]; 2292 Faraday Avenue, Carlsbad, CA 92008 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): ACKERMANN, Elizabeth, J. [US/US]; 519 Santa Victoria, Solana Beach, CA 92075 (US). BENNETT, C., Frank [US/US]; 1347 Cassins Street, Carlsbad, CA 92008 (US). DEAN, Nicholas, M. [GB(US]; 2110 Whisperwind Lane, Olivenhein, CA 92024 (US). MARCUSSON, Eric, G. [US/US]; 6369 Caminito de Pastel, San Diego, CA 92111 (US).

(74) Agents: LICATA, Jane, Massey et al.; Law Offices of Jane Massey Licata, 66 E. Main Street, Marlton, NJ 08053 (US).

(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

#### Published

With international search report.

(54) Title: ANTISENSE MODULATION OF NOVEL ANTI-APOPTOTIC BCL-2-RELATED PROTEINS

### (57) Abstract

Compositions and methods are provided for modulating the expression of novel anti-apoptotic bcl-2-related proteins. Antisense oligonucleotides targeted to nucleic acids encoding the human novel anti-apoptotic bcl-2-related proteins A1 and mcl-1 are preferred. Methods of using these compounds for modulation of novel anti-apoptotic bcl-2-related protein expression and for treatment of diseases associated with expression of novel anti-apoptotic blc-2-related proteins are also provided. Also provided are methods of using these compounds for promoting apoptosis and for treatment of diseases for which promotion of apoptosis is desired.